PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Complete if Known Substitute for form 1449A/PTO 09/830,457 Application Number INFORMATION DISCLOSURE I.A. 10/27/1999 Filing Date STATEMENT BY APPLICANT Erez Braun First Named Inventor (use as many sheets as necessary) 1641 Art Unit Ann Y. Lam Examiner Name 201448-000341

Attorney Docket Number

xaminer	Cite	U.S. Patent Document Number – Kind Code ² (if known)	U.S. PATENT DO	Name of Patentee or	Pages, Columns, Lines, Where Relevan
nitials .	No.1	Number – Kind Code (if known)	MM-DD-YYYY	Applicant of Cited Document	Passages or Relevant Figures Appear
P	1.	US-2002/0137070 A1	09/26/2002	Mirkin et al.	
	2.	US-2002/0137071 A1	09/26/2002	Mirkin et al.	
1	3.	US-2002/0137072 A1	09/26/2002	Mirkin et al.	
 -: - 	4.	US-2002/0146720 A1	10/10/2002	Mirkin et al.	_
1	5.	US-2002/0155462 A1	10/24/2002	Mirkin et al.	
 	6.	US-2002/0160381 A1	10/31/2002	Mirkin et al.	
+-	7.	US-2002/0164605 A1	11/07/2002	Mirkin et al.	
	8.	US-2002/0182608 A1	12/05/2002	Connolly	
	9.	US-2003/0022169 AI	01/30/2003	Mirkin et al.	
	10.	US-2003/0059777 A1	03/27/2003	Mirkin et al.	-
<u></u>	11.	US-2003/0068622 A1	04/10/2003	Mirkin et al.	
<u> </u>	12.	US-2003/0087242 A1	05/08/2003	Mirkin et al.	
	13.	US-2003/0044805 A1	03/06/2003	Mirkin et al.	
	14.	US-2003/0049630 A1	03/13/2003	Mirkin et al.	
	15.	US-2003/0054358 A1	03/20/2003	Mirkin et al.	
	16.	US-2003/0180783 A1	09/25/2003	Mirkin et al.	
 	17.	US-3,833,894	09/03/1974	Aviram et al.	
+	18.	US-4,314,821	02/09/1982	Rice	
1-	19.	US-4,822,566	04/18/1989	Newman	
+	20.	US-5,063,417	11/05/1991	Hopfield	
- 	21.	US-5,089,545	02/18/1992	Pol	
-	22.	US-5,284,748	02/08/1994	Mroczkowski et al.	
+	23.	US-5,312,527	05/17/1994	Mikkelsen et al.	
	24.	US-5,445,934	08/29/1995	Foder et al.	
+	25.	US-5,561,071	10/01/1996	Hollenberg et al.	
+	26.	US-5,563,424	10/08/1996	Yang et al.	
1	27.	US-5,653,939	08/05/1997	Hollis et al.	
	28.	US-5,707,845	01/13/1998	Ueyama et al.	
-	29.	US-5,739,308	04/14/1998	Kandimalla et al.	
	30.	US-5,770,369	06/23/1998	Meade et al.	
	31.	US-5,787,032	07/28/1998	Heller et al.	
	32.	US-5,787,332	07/28/1998	Black et al.	
+-	33.	US-5,824,473	10/20/1998	Meade et al.	
\rightarrow	34.	US-5,837,546	11/17/1998	Allen et al.	

BOS1330712.2

Sheet

of

er distos

FEB 1 1 2004 e Beneral

PTO/SB/08A (10-01)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

ation unless it contains a valid OMB control number

Substitute for form	1449A/PTO	C	omplete if Known
•	TION DISCLOSUR	Application Number	09/830,457
			I.A. 10/27/1999
STATEME	NT BY APPLICAN	First Named Inventor	Erez Braun
. (use as	many sheets as necessary)	Art Unit	1641
		Examiner Name	Ann Y. Lam
Sheet	of	Attorney Docket Number	201448-000341

			U.S. PATENT DO	CUMENTS	<u></u>
Examiner Initials	Cite No.'	U.S. Patern Document Number - Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevan Passages or Relevant Figures Appear
$\overline{}$)		*		
(D)	35.	US-5,858,659	01/12/1999	Sapolsky et al.	
	36.	US-5,874,046	02/23/1999	Megerle	
	37.	US-5,876,976	03/02/1999	Richards et al.	
	38.	US-5,891,630	04/06/1999	Eggers et al.	
	39.	US-5,914,505	06/22/1999	Hisada et al.	
	40.	US-5,946,550	08/31/1999	Papadimitrakopoulos	-
	41.	US-6,051,380	04/18/2000	Sosnowski et al.	
	42.	US-6,060,023	05/09/2000	Maracas	
-{	43.	US-6,071,699	06/06/2000	Meade et al.	
- 	44.	US-6,093,370	07/25/2000	Yasuda et al.	
	45.	US-6,210,880 B1	04/03/2001	Lyamichev et al.	
 	46.	US-6,391,558 B1	05/21/2002	Henkens et al.	
 	47.	US-6,399,303 B1	06/04/2002	Connolly	
	48.	US-6,645,721 B2	11/11/2003	Mirkin et al.	
Examiner . Signature		J. J. Lar		Date Considered Z/17/05	

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at 222 uspto gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

PTO/SB/08A (10-01)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE to respond to a collection of information unless it contains a valid OMB control number.

Substitute	for form 14	49A/PTO		· ·	•	Complete if Known				
INIEG	Draat	CIONI D	TCC	LOSURE	Application Number		09/830	9/830,457		
4					Cities Date	Filing Date First Named Inventor		I.A. 10/27/1999		
STAT	EME	AL BA	APP	LICANT	First Named Inventor			Erez Braun		
	(use as m	any sheets as	s necesso	ary)	Art Unit		.1641	1641		
	•				Examiner Name	Examiner Name		nn Y. Lam		
Sheet			of .		Attorney Docket Numb	ber	20144	8-000341		
:			•		U.S. PATENT DOCUM	ENTS				
Examiner Initials	Cite No.		Patent Do Kind Cod	cument e² (if known)	Publication Date MM-DD-YYYY	Name of Patentee Applicant of Cited Do		Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear		

FEB 1 1 2004

		FC	PREIGN PATENT I	DOCUMENTS		
Examiner Initials	Cite No. 1	Foreign Patent Document Kind Code ³	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T*
- A	40	Country Code ³ Number ⁴ (if known) · EP 0 364 208 A1	04/18/1990	Thome, Smith, Astill		·- · -· · ·
[R	49.	EP 0 304 208 AT	04/18/1990	Technologies, Inc.		·
	50.	EP 0 444 840 A1	09/04/1991	Ciba Corning Diagnostics Corp.		
	51.	JP 04/148669	05/21/1992	Abstract - 04148669 A		
	52.	WO 00/25136	05/04/2000	Technion Research and Development Foundation Ltd.		
	53.	WO 90/05300	05/17/1990	Midwest Research Technologies, Inc.		
	54.	WO 93/25003	12/09/1993	Yale University	,	
	55.	WO 94/05045	03/03/1994	The Regents of the University of California		
	56.	WO 97/44651	11/27/1997	Australian Membrane and Biotechnology Research Institute		
	57.	WO 98/31839	07/23/1998	President and Fellows of Harvard College		
	58.	WO 98/53841	12/03/1998	The State of Oregon acting by and through the State Board of Higher Education on behalf of the University of Oregon		
	59.	WO 99/04440	01/28/1999	Technion Research and Development Foundation Ltd.		
1.	60.	WO 99/29711	06/17/1999	Nanogen, Inc.		. :
1	61.	WO 99/35256	07/15/1999	Institut Pasteur		
-	62.	WO 99/36573	07/22/1999	Schichman et al.		
	63.	WO 99/57550	1 1/1 1/1999	Technion Research and Development Foundation Ltd.		
2/	64.	WO 99/60165	11/25/1999	Connolly		
Examiner Signature	. /	12 W/Da	· · · ·	Date Considered 2/17/	05	

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 1 3004

Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at 222 uspto gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

PTO/SB/08B (10-01)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO	Co	omplete if Known
FORMATION DISCLOSURE	Application Number	09/830,457
	Filing Date	I.A. 10/27/1999
TATEMENT BY APPLICANT	First Named Inventor	Erez Braun
(use as many sheets as necessary)	Art Unit	1641
	Examiner Name	Ann Y. Lam
et of	Attorney Docket Number	201448-000341

FEB 1 1 2004

		OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS	· .						
Examiner nitials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.)., date, page(s), volume-issue number(s), publisher, city and/or country where published.							
B	65.	Ackley et al., "DNA Technology for Optoelectronics," <u>IEEE</u> , (1998)							
	66.	Alivisatos et al., "Organization of 'Nanocrystal Molecules' Using DNA," Nature, 382;609-611 (1996)							
	67.	Averin et al., in Altshuler, eds., "Single Electronics: A Correlated Transfer of Single Electrons and Cooper Pairs in Systems of Small Tunnel Junctions," Mesoscopic Phenomena in Solids, New York, New York: Elsevier Science Publishing Company, Inc., 173-271 (1991)							
	68.	Barton, "Metal/Nucleic-Acid Interactions," in Bertini, eds., <u>Bioinorganic Chemistry</u> , Sausalito, California:University Science Books, pp. 455-503 (1994)							
	69.	Bensimon et al., "Alignment and Sensitive Detection of DNA by a Moving Interface," Science, 265:2096-2098 (1994)							
	70.	Bensimon et al., "Stretching DNA with a Receding Meniscus: Experiments and Models," Physical Review Letters, 74(23):4754-4757 (1995)							
	71.	Bertini et al., "Bioinorganic Chemistry," <u>University Science Books</u> , 455-503 (1994)							
	72.	Birrell et al., "Silver Enhanced Colloidal Gold ad a Cell Surface Marker for Photoelectron Microscopy," Journal of Histochemistry and Ctyochemistry, 34(3):339-345 (1986)							
	73.	Braun et al., "DNA-Templated Assembly and Electrode Attachment of a Conducting Silver Wire," Nature, 391:775-778 (1998)							
	74.	Burroughes et al., "Light-Emitting Diodes Based on Conjugated Polymers," Nature, 347:539-541 (1990)	· .						
	75.	Chen et al., "Synthesis from DNA of a Molecule with the Connectivity of a Cube," Nature, 350:631-633 (1991)							
7	76.	Coffer et al., "Dictation of the Shape of Mesoscale Semiconductor Nanoparticle Assemblies by Plasmid DNA," Appl. Phys. Lett., 69(25):3851-3853 (1996)							
xaminer ignature		Date Considered 2/17/05							

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.



Approved for use through 10/31/2002. OMB 0651-0031 U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE.

Ur	nder the Pap	erwork Redu	ction Ac	of 1995, no per	sons are required	to respond to a co			ss it contains a valid OMB co	ontrol number.	
Substitute	for form 1	449A/PTO	• •				Con	iplete if Kn			
INFO	RMA'	TION I	DISC	LOSURE	Application	on Number			830,457		
				LICANT		<u> </u>			. 10/27/1999		
SIA.		nany sheets o			. First Nam	ed inventor			z Braun		
	(use as r	nany sneets t	is necessi	ury).	Art Unit	Art Unit 1641 Examiner Name Ann Y. Lam					
	,		r		Examiner	Name	·		-,		
Sheet			of		Attorney	Docket Number		201	201448-000341		
				OTHER PRIOR	ART - NON P	ATENT LITERA	TURE DOC	UMENTS			
Examiner Initials	Cite No. ¹		item (b	ook, magazine, j	ournal, serial, syr publisher, ci	L LETTERS), title mposium, catalog, ity and/or country	etc.)., date, p where publisl	age(s), volume hed.	-issue number(s),	T _. ²	
Ø.	77.	Dansche Journal	r et al., of Histo	"Light Microchemistry ar	oscopic Visu nd Cytochem	alization of Co istry, 31(12):1	lloidal Go 394-1398 (ld on Resin (1983)	-Embedded Tissue,"		
	78.	Dansche Electron	r, "Loc icrosco	alization of (py," <u>Histoch</u>	Gold in Biolo em., 71:81-8	gical Tissue 8 (1981)	A Photoch	emical Met	hod for Light and		
	79.	Ions, Sy	nthesis	"An Extensi and Structures, 99(8):279	e of an Unusi	ual Polymeric	ytosine Re Silver(I) C	esidues in the Complex of	ie Binding of Metal 1-Methylcytosine," <u>J.</u>		
	80.	<u>America</u>	ın Cher	nical Society	, 114(24):96:	52-9655 (1992)	٠.	Nodes," <u>Journal of</u>		
	81.	Vols. 1 : (1973)	and 2, I	New York, N	ew York:Am	erican Elsevie	r Publishir	ng Company	organic Biochemistry, y, pp. 1191-1243		
	82.	Fink et	al., "Ele	ectrical Cond	uction Throu	gh DNA Mole	cules," Na	ture, 398:4	07-410 (1999)		
	83.	Goffeau	, "Mol	ecular Fish or	n Chips," Nat	ure, 385:202-2	203 (1997)				
	84.	Grabar o Nanome	et al., "leter-Sca	Kinetic Conti le Architectu	rol of Interpa ire," <u>J. Am. (</u>	rticle Spacing Chem. Soc., 11	in Au Coll 8:1148-11	loid-Based 53 (1996)	Surfaces: Rational		
	85.	Hall et a (1996)	ıl., "Ox	idative DNA	Damage Thr	ough Long-Ra	inge Electi	ron Transfe	r," <u>Nature,</u> 382:731-73	5	
	86.	Holgate 31(7):93			d – Silver Sta	ining," <u>Journa</u>	of Histoc	hemistry ar	nd Cytochemistry,	:	
	87.			al., "An Immo 9-831 (1983)		Acid Junction	Construc	ted from Ol	igonucleotides,"		
	88.	Kastner	et al., '	'The Single I	Electron Tran	sistor," Review	vs of Mod	ern Physics	, 64(3):849-858 (1992)	
	89.	68(18):	2574-2	576 (1996)					pl. Phys. Lett.,		
	90.	Kouwer Electron	hoven Trans	et al., "Introc port, The Ne	duction to Me therlands:Klu	esoscopic Elec iwer Academic	tron Trans Publisher	port," in So rs, pp. 1-44	hn, eds., <u>Mesoscopic</u> (1997)		
春		_		/	· .			•		<u>. </u>	
Examiner Signature		(1)			w			ate onsidered	2/18/05		

^{*} EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

PTO/SB/08B (10-01)

Approved for use through 10/31/2002. OMB 0651-0031 U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

FEB 1 1 2004

Substitute	for form	1449A/PTO	•		Complete if Known						
INIEO	DRAA	TION DISC	ACHDE	Application Number	09/830,4	57	*				
				Filing Date	I.A. 10/2	I.A. 10/27/1999					
STAT	EME	NT BY APP	LICANI	First Named Inventor	Erez Bra	un	 				
	(use as	many sheets as necess	ary)	Art Unit	1641						
	-		· · · ·	Examiner Name Ann Y. Lam							
Sheet		of		Attorney Docket Number 201448-000341							
			OTHER PRIOR A	T – NON PATENT LITERATURE	DOCUMENTS						
		T		•			· · ·				
Examiner Initials	Cite No, 1	item (b	ook, magazine, jour	(in CAPITAL LETTERS), title of the a nal, serial, symposium, catalog, etc.)., d publisher, city and/or country where p	nte, page(s), volume-issue ni iblished	ımber(s),	T² :				
	91.	76(3):479-482	(1996)	port in a Multiwalled Carbon N			1				
	92.	Meirav et al., " 11:255-284 (19		Phenomena in Semiconductors	," <u>Semiconductor Sci</u>	ence Technology					
	93.		Mirkin et al., "A DNA-Based Method for Rationally Assembling Nanoparticles into Macroscopic Materials," Nature, 382:607-609 (1996)								
	94.		Mueller et al., "Design and Synthesis of a Knot From Single-Stranded DNA," <u>Journal of American Chemical Society</u> , 113(16):6306-6308 (1991)								
	95.		Porath et al., "Single Electron Tunneling and Level Spectroscopy of Isolated C ₆₀ Molecules," <u>J. Appl. Phys.</u> , 81(5):2241-2244 (1997)								
	96.	Roberts et al., 'Section of Scie (1935)	'A New Procedunces, N. V. Noc	ure for the Detection of Gold or ord-Hollandsche Uitgeversmaat	n Animal Tissue," <u>Pro</u> schappij, Amsterdam,	ceedings of the 38:540-544					
	97.		ngle Electron Tr 82(2):696-701 (ansistor Using a Molecularly L (1997)	inked Gold Colloidal	Particle Chain,"					
	98.	Scopsi et al., "(Application in 145 (1986)	Colloidal Gold I Light Microsco	Probes in Immunocytochemistry py by Use of Silver Intensificat	y. An Optimization of ion Procedures," <u>Med</u>	Their . <u>Biol.,</u> 64:139-					
	99.	Scopsi et al., "Increased Sensitivity in Immunocytochemistry. Effects of Double Application of Antibodies and of Silver Intensification on Immunogold and Peroxidase-Antiperoxidase Staining Techniques," <u>Histochemistry</u> , 82:321-329 (1985)									
	100.	1993.		Knots and Catenanes," New J	·	7(10):739-755;					
	101.	Size, Physics o	f Semiconducto	r Devices, 2 nd Ed., 349:490-49	(date unknown)						
	102.	Springall et al., Histochemistry		of the Immunogold-Silver Stai	ning Method for Para	fin Sections,"					

^{*} EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

PTO/SB/08B (10-01)

Approved for use through 10/31/2002. OMB 0651-0031 U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number. Complete if Known Substitute for form 1449A/PTO 09/830,457 Application Number INFORMATION DISCLOSURE I.A. 10/27/1999 Filing Date STATEMENT BY APPLICANT Erez Braun First Named Inventor (use as many sheets as necessary) 1641 Art Unit Ann Y. Lam **Examiner Name** Attorney Docket Number 201448-000341 of Sheet OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the T.2 Examiner item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. Initials Teasdale et al., "Identification of Oestrogen Receptors in Cells of Paraffin-Processed Breast Cancers 103. by IGSS," Histochemistry, 87:185-187 (1987) Wirtz, "Direct Measurement of the Transport Properties of a Single DNA Molecule," Physical 104. Review Letters, 75(12):2436-2439 (1995) Zimmermann et al., "DNA Stretching on Functionalized Gold Surfaces," Nucleic Acids Research, 105. 22(3):492-497 (1994) Date Examiner Considered Signature

FEB 1 1 2004

^{*} EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.